

## CLAIMS

1. A method of operating a multicast radio network including a master radio station and a plurality of slave radio stations, comprising transmitting data from a master station, receiving the data at each of the plurality of slave stations, at each slave station, determining whether the received data is decodeable or undecodeable, transmitting a negative acknowledgement if the received data is undecodeable, transmitting a positive acknowledgement if the received data is decodeable and the slave station is in a first state, transmitting no acknowledgement if the received data is decodeable and the slave station is in a second state, wherein only one of the plurality of slave stations is in the first state.
2. A method as claimed in claim 1, comprising setting at least one of the plurality of slave stations into one of the first and second states in response to receiving a command transmitted by the master station.
3. A method as claimed in claim 1 or 2, further comprising setting the one of the plurality of slave stations having the lowest quality radio communication with the master station to be the only one of the plurality of slave stations in the first state.
4. A method as claimed in claim 1 or 2, further comprising adjusting the transmitted power level of at least one of the plurality of slave stations in response to a command transmitted by the master station.
5. A multicast radio system comprising a master radio station and a plurality of slave radio stations, the master station comprising means for transmitting data and means for receiving acknowledgement messages from the slave stations, each slave station comprising means for receiving data from the master station, means for determining whether the received data is

decodeable or undecodeable, means for transmitting a first acknowledgement message if the received data is undecodeable, means for transmitting a second acknowledgement message if the received data is decodeable, and means for setting the slave station into a first state wherein transmission of the 5 second acknowledgement message in response to receiving decodeable data is enabled and means for setting the slave station into a second state wherein transmission of the second acknowledgement message in response to receiving decodeable data is disabled, wherein only one of the plurality of slave stations is in the first state and wherein a plurality of the said messages 10 transmitted by the slave stations are at least partially concurrent.

6. A system as claimed in claim 5, wherein the means for setting the slave station into the first state is responsive to receiving a first command and the means for setting the slave station into the second state is responsive to receiving a second command, the first and second commands being 15 transmitted by the master station.

7. A system as claimed in claim 5 or 6, wherein the master station has means for assessing the quality of radio communication with each slave 20 station, and the only one of the plurality of slave stations in the first state is a slave station having the lowest quality radio communication with the master station.

8. A system as claimed in claim 6, wherein at least one of the 25 plurality of slave stations comprises means to adjust its transmitted power level in response to receiving the first command from the master station.

9. A system as claimed in claim 6, wherein at least one of the 30 plurality of slave stations comprises means to adjust its transmitted power level in response to receiving a third command from the master station.

10. A master station for use in a multicast radio network, comprising means to transmit a first command instructing a slave station to adopt a first state wherein transmission of an acknowledgement message in response to receiving decodeable data is enabled and a second command instructing the  
5 slave station to adopt a second state wherein transmission of the acknowledgement message in response to receiving decodeable data is disabled.
11. A master station as claimed in claim 10, further comprising  
10 means to transmit the first and second commands such that only one of a plurality of slave stations is in the first state.
12. A master station as claimed in claim 11, further comprising means to assess the quality of radio communication with each of the plurality  
15 of slave stations and means to command a slave station which has the lowest quality radio communication to be the only one of the plurality of slave stations in the first state.
13. A master station as claimed in any one of claims 10, 11 or 12,  
20 further comprising means to command a slave station to alter the transmitted power level of said slave station.
14. A slave radio station for use in a multicast radio network including a master station and a plurality of the slave stations, the slave station  
25 comprising means for receiving data, means for determining whether the received data is decodeable or undecodeable, means for transmitting a first acknowledgement message if the received data is undecodeable, means for transmitting a second acknowledgement message if the received data is decodeable, and means for setting the slave station into a first state wherein  
30 transmission of the second acknowledgement message in response to receiving decodeable data is enabled and means for setting the slave station

into a second state wherein transmission of the second acknowledgement message in response to receiving decodeable data is disabled.

15. A slave station as claimed in claim 14, wherein the means for  
5 setting the slave station into the first state is responsive to receiving a first command and the means for setting the slave station into the second state is responsive to receiving a second command.

16. A slave station as claimed in claim 15, comprising means to  
10 adjust its transmitted power level in response to receiving the first command.

17. A slave station as claimed in claim 15, comprising means to  
adjust its transmitted power level in response to receiving a third command.

15 18. An integrated circuit comprising the master station as claimed in  
any one of claims 10 to 12.

19. An integrated circuit comprising the master station as claimed in  
claim 13.

20 20. An integrated circuit comprising the slave station as claimed in  
any one of claims 14 to 17.